

NAVAL MEDICAL RESEARCH AND DEVELOPMENT NEWS

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Naval Medical Research Center – Asia Officially Opens Its Doors

SINGAPORE – The Naval Medical Research Center – Asia (NMRC-A) officially opened its doors during a ribbon cutting ceremony September 20, 2013. NMRC-A Command Officer, Capt. Carlos LeBron cut the ribbon establishing NMRC-A as the official headquarters for Navy Medicine research and development efforts in Southeast Asia, ending a lengthy transition from NAMRU-2 Pacific, at Joint Base Pearl Harbor-Hickam, Hawaii, back into the Pacific.

“This is a very special moment, not to mention a historic event, as we establish a new command in Southeast Asia,” said LeBron. He went on to thank all of the people who put so much into making this transition a reality, including NAMRU-2, NMRC, NMRDC, PACOM, and especially the former U.S. Ambassador to Singapore and Deputy Chief of Mission, David Adelman and Louis Mazel, respectively, as well as their new replacements Ambassador Kirk Wagar and Blair Hall.

U.S. Navy Chaplain, Lt. Cmdr. Dwayne Jackson gave the traditional bless-

ing after which LeBron cut the ribbon. All of the guests were invited to tour the new NMRC-A office spaces. It was a short, but sweet ceremony followed by a cake cutting making it even sweeter!

The guests in attendance included the Head of the Singapore Armed Forces Bio-defence Centre, Lt. Col. Vernon Lee; Dr. Eng Eong Ooi, Duke University – National University Singapore (NUS); U.S. Embassy, Singapore, Deputy Chief of Mission, Blair Hall; the Commanding Officer of Navy Region Center Singapore, Capt. Paul Foster, and guests from as far away as Thailand including the Armed Forces Research Institute of Medical Sciences Commanding Officer Col. William Geesey.

NMRC-A will work out of two separate buildings at Sembawang to support the research projects of NMRC-A and NAMRU-2 Detachment Phnom Penh. NMRC-A scientists will also be working with Duke-NUS scientists on projects of mutual interest in infectious disease. ■



Capt. Carlos LeBron, commanding officer of NAMRU-A and Deputy Chief of Mission, Blair Hall cuts the ribbon establishing NMRC—Asia in Singapore.

NMRC Commanding Officer's Message

To all of you I have to say *Thank You!* Our staff and their families have been through a lot recently, but your mission focus and research productivity remain incredible. I could cite many examples of your success, and maybe I should start to do that more frequently, but I'd like to highlight a perspective I gained a few weeks ago.

I happened to be on vacation with my family and they were asking me about work. As I was trying to explain our enterprise, a lead story came on CNN discussing work on suicide risk conducted at NHRC. The next day, CNN ran a lead story on malaria vaccine work conducted at NMRC. The next day, there was a reference in the local newspaper to a JAMA article discussing combat casualty care advances from a NMRC author.

Throughout the week there was mention of the events in Egypt on the news each day, allowing me to discuss the resiliency of our NAMRU-3 staff as they continue to execute their mission despite tremendous political upheaval. By the end of the week, my family was very tired of all my bragging about the breadth and depth of success in Navy medical research. And that was just one week.

We are all aware that Navy Medicine is facing substantial organizational and budget challenges, most recently characterized by the simultaneous stand up of the Defense Health Agency and closure of the government. Despite all the challenges and uncertainty, you have been unwavering in your commitment to our mission and remarkable in your continued success. I find myself focusing too often on the uncertainties and challenges we face and not enough on the opportunities we have and the ongoing accomplishments of the enterprise. Thank you for not losing focus. Keep up the great work.

NMRC Commanding Officer sends,
John W. Sanders III, CAPT, MC, USN



NMRC-Asia Commanding Officer's Message

In June 2013, Adm. Jonathan Greenert, CNO, approved the relocation of Naval Medical Research Unit 2 (NAMRU-2) Pacific from its temporary location in Pearl Harbor to a new location in Singapore and is now known as Naval Medical Research Center – Asia (NMRC-Asia). We are now heading back to our area of responsibility, an area where we have worked for close to 70 years.

The history of NAMRU-2 headquarters includes locations in Guam, Taipei, Vietnam, Manila, Jakarta, and Pearl Harbor. Our NAMRU-2 detachment in Phnom Penh, Cambodia has grown from a tiny operation in the mid 90's to a full state of the art infectious diseases laboratory. The transition back to Asia has not been an easy one. For more than a year many high level negotiations took place between Ministry of Defense-Singapore, BUMED, PACOM, Naval Installation Sembawang, U.S. Mission Singapore, and NMRC. Thanks to all the key players who for months gave their best to our command we are now in our new headquarter spaces in Sembawang Wharf. More staff continues to transition

from Pearl Harbor to Singapore every week. Our last day at NAMRU-2 Pacific has been set for October 31, 2013.

Pearl Harbor was good, but it's time to return back to where we belong, it's time to continue, renew and initiate collaborations with all our great partners and friends in the area, and above all, time to bring the old solid science artillery back to Asia.

To our staff in Cambodia, thanks for surviving for such a long time away from the "mother ship" and above all for having maintained an impeccable high quality science program regardless of the long distance and logistical nightmares. I would finally like to express my deepest gratitude to the Singaporean Ministry of Defense for their unconditional support.

NMRC-Asia Commanding Officer sends,
C. I. LeBron, CAPT, MSC, USN



Message to Navy Medicine Civilian Staff

Navy Medicine Civilian Shipmates,

I would like to take a moment to recognize the incredible work and sacrifice all of you make in support of the Navy Medicine mission. The effects of sequestration on the civilian community have been significant. Many of you were required to endure the hardships of the Department's planned 6-day furlough, and as the end of the year approaches our ability to reward your performance is also somewhat limited.

Given the fiscal realities, DoD has limited agencies from issuing discretionary monetary awards during the sequestration period. And while the DoD guidance does encourage the use of non-monetary options to recognize performance such as time-off awards — those too were very limited. Our civilians are a critical component of the care we provide to our Sailors, Marines and their families.

And today, we enter into a government shutdown furlough causing you even greater anxiety and uncertainty. The furloughs are in no way a reflection of the importance of your work. Navy Medicine is proud of the contributions of its civilian workforce and a shutdown furlough should in no way be considered as a statement to the contrary. We will continue providing quality necessary care throughout any government shutdown and our facilities will continue to meet the emergent medical needs of our beneficiaries despite the situation.

We will do our best to provide clear information about the status of events as the days progress. I am proud of each and every one of you and your contributions to Navy Medicine. Thank you for all you do as a member of the Navy Medicine family. ■



VADM Matthew L. Nathan, surgeon general of the Navy and chief of the Navy's Bureau of Medicine and Surgery.

Dr. Raymond H. Watten, Capt. MC, U.S. Navy 1922 – 2013



Dr. Raymond H. Watten, Capt. MC, U.S. Navy. 1922—2013

Dr. Watten was born in Minnesota, August 20, 1922, the sixth of seven children. His parents emigrated from Norway about 1900. His natural intelligence and curiosity led him on a circuitous route to a career in tropical medicine research. His career spanned three conti-

nents in four decades and contributed to advances in cholera treatment. He died August 23 with his family members by his side. He once said, "If you are a doctor and treat one patient, that's great. But if you are in research, you are helping thousands of people."

Watten was the commanding officer of the Naval Medical Research Unit (NAMRU) in Taiwan; NAMRU in DaNang, Viet Nam (which he founded); NAMRU in Ethiopia; and NAMRU-3 in Cairo, Egypt, where he was honored to receive an award from President Sadat. His research encompassed malaria, cholera, Rift Valley fever, tick-borne diseases, schistosomiasis and parasitic and other infectious diseases. He is known as the inventor of the Watten-cot, still in use wherever cholera rages.

He graduated from Stanford Medicine School in 1949. During the Korean War in December 1950, Watten was given five days to pack for Japan, leaving his family in Palo Alto, Calif. In Japan, he ran a ward for wounded sol-

diers who were arriving by the hundreds every day from Korea suffering from frostbite and gangrene.

Returning to the states, he worked at the Naval Hospital in Oakland, Calif., until his next posting in July 1954, when he moved with his family to Taiwan, where he worked at the Naval Medical Research Unit. During his last year there, in 1974, before returning to the San Diego Naval Hospital, Watten ran an obesity clinic testing the efficacy of the ketogenic diet, a version of the Dr. Atkins' diet.

His next posting was to Ethiopia, after six months he was evacuated due to the Ethiopian civil war. The Navy then sent him to Egypt and he was the commanding officer of NAMRU-3, where he retired from the Navy in 1982. He went on to become the director of Gorgas Memorial Laboratory in Panama City, Panama until 1987, when he returned to the U.S. ■

NSMRL At The Top Of The World

GROTON - The Naval Submarine Medical Research Laboratory (NSMRL) reached a new high - in latitude - when a team of three researchers embarked in early September on the Coast Guard Cutter HEALY in the Arctic to evaluate the Submarine Team Behaviors Tool (STBT), a metric designed to enable submarine commanders to assess the resilience of their tactical teams. The purpose of this venture was to exercise the STBT in an operational setting and provide recommendations regarding usefulness, applicability of specific behavior measures, correlation of results between observers, ease of use, and other observations related to tool performance. Future plans include the development of a Submarine Team Performance Manual.

Capt. Steven Wechsler, Lt. Katherine Couturier, and retired Cmdr. Richard Severinghaus met the HEALY off the coast of Barrow, Alaska by helicopter and, without delay, headed north to the ice.

The NSMRL team accompanied a multi-disciplinary team including members of the Coast Guard Research and Development Center; Coast Guard Strike Teams; Coast Guard District Seventeen; Coast Guard Pacific Area Command; Coast Guard Headquarters Office of Research, Development, Test and Evaluation; National Oceanographic Atmospheric Administration; Woods Hole Oceanographic Institute Center for Island, Maritime, and Extreme Environment Security; and the University of Alaska Fairbanks.

Their combined technologies included hand-launched military-style unmanned aircraft, unmanned underwater vehicles, oil skimmers, remotely operated vehicles, and an Emergency Response Management Application. The mission: test modern technologies in the detection, surveillance and recovery of simulated oil trapped in or under ice at the polar ice edge. This challenging operational backdrop enabled the NSMRL team to obtain excellent observational data and comprehensively test the STBT.

While there has been much written on the technical skills of submarine warfare, there is not a large body of work available to submarine crews on the non-technical, behavioral aspects of submarine teamwork. The STBT articulates observable behaviors that characterize the degree of resilience of



The NSMRL Team on "Ice Liberty" at approximately 76 degrees North latitude.

a tactical team. There are four levels of team resilience in the STBT measured through observation of five team practices: dialogue, decision-making, critical thinking, use of bench strength, and problem-solving capacity. By observing teams performing in challenging operations and scenarios, and noting the presence (or absence) of these behaviors, an experienced observer can gauge team resilience levels.

So why travel to a Coast Guard Cutter north of Alaska to obtain data for a 'submarine' research project? Aside from the inherent difficulties in boarding a submarine at sea, HEALY offered several advantages that supported NSMRL objectives. HEALY had been at sea in an isolated environment since early July, stores were low, and fresh foods were depleted when the team boarded. The ship's crew

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Navy Medicine Presents Malaria Vaccine Research Achievements at Roundtable



ZOWLA, Togo (Sept. 17, 2012) Lt. Cmdr. Kelly Larson, left, and Hospital Corpsman 2nd Class Edward Lopez test a Togolese villager for malaria during an Africa Partnership Station 2012 health fair. Africa Partnership Station is an international security cooperation initiative, facilitated by the commander of U.S. Naval Forces Europe-Africa, aimed at strengthening global maritime partnerships through training and collaborative activities in order to improve maritime safety and security in Africa. (U.S. Air Force photo by Tech. Sgt. Donald R. Allen/Released).

SILVER SPRING, Md. - Navy Medicine's malaria vaccine research achievements were highlighted during the most recent meeting of the Malaria Roundtable in Washington, D.C., Sept. 12. The Malaria Roundtable is composed of representatives from about 20 groups with a commitment to progress in malaria research and development including the American Society of Tropical Medicine and Hygiene, Malaria No More and World Vision; the roundtable is co-chaired by PATH (Program for Appropriate Technology in Health) and the U.N. Federation.

Capt. Judith Epstein, the clinical director of the Naval Medical Research Center's (NMRC) Malaria Vaccine Development effort spoke about the collaborative research effort that made news recently about the breakthrough in a malaria vaccine that was reported in the journal, *Science*, in August.

"At the Malaria Roundtable I had the opportunity to present the results of a clinical trial assessing the safety, tolerability, immunogenicity and protective efficacy of a malaria vaccine that was administered intravenously to healthy adult volunteers during a clinical trial at NIH," said Epstein. "This was a collaborative effort involving researchers from NMRC, the Walter Reed Army Institute of Research, the National Institutes of Health and Sanaria, Inc. The vaccine was well tolerated with no serious adverse events and this first assessment of the IV administration of the vaccine resulted in high-level protection. The findings demonstrated that a dose-threshold for inducing protective efficacy can be achieved and it is safe and meets regulatory standards."

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Navy Lab in Cairo Provides Lab Risk Management Workshop

CAIRO - Researchers at the U.S. Naval Medical Research Unit No. 3 (NAMRU-3) provide support to the U.S. Department of State project, "Biosafety and Biosecurity Capacity Building and Strengthening in North Egypt". The NAMRU-3 team presented a workshop on laboratory risk management in June, in Alexandria, Egypt.

"This type of training is an important part of NAMRU-3's mission of capacity building for our host country Egypt," said Capt. Buhari Oyofa, NAMRU-3's commanding officer. The workshop, held at the Medical Technical Center for Research and Service, Medical Research Institute, Alexandria University, was attended by 26 physicians and laboratory technicians from the university. NAMRU-3's Dr. Atef El Gendy, Dr. Isabelle Nakhla, and Dr. Hanan El Mohammady were joined by Dr. Dina Ramadan from the Ministry of Public Health Laboratory in presenting the workshop.

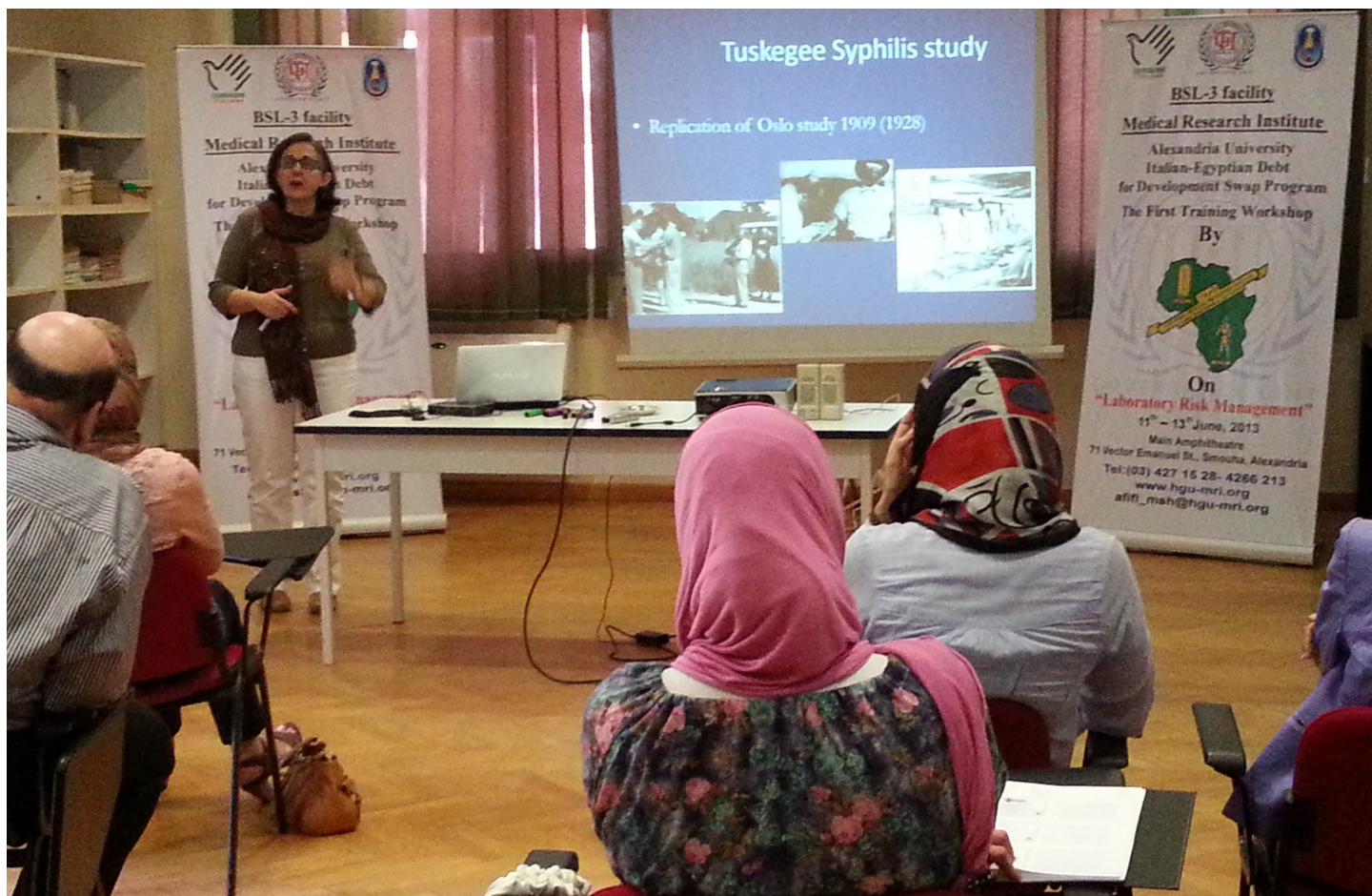
With the aim of training the trainers, the attendees will teach their students about blood-borne pathogens and biosafety and biorisks. The attendees were keenly interested in the topics presented, which included sterilization and disinfection techniques, biosafety versus biosecurity, research integ-

riety, biosafety program components, standard precautions and engineering controls, containment of spills, research ethics in the lab practice, risk management, biological waste management, biohazard waste management, biological safety cabinets and shipping of infectious and dangerous materials.

A training package of handouts on all presentations, and a CD of training materials was given to each participant. During class breaks DVDs on different safety fields were played.

At the conclusion of the Alexandria training, Dr. Hanan El Mohammady discussed the training with the participants. The participants felt the workshop should include lectures on chemical waste disposal. They also requested advanced training on risk management and expressed their interest in visiting the laboratories at NAMRU-3.

The same workshop was repeated at NAMRU -3 later in June for 19 participants from the institutions in Cairo which included Ain Shams University, Al Azhar University, Misr International University and the National Research Institute. ■



NAMRU-3's Dr. Isabelle Nakhla discusses Laboratory Risk Management in Alexandria, Egypt. Photo by Dr. Hanan El Mohammady.

Focusing the Power of NextGen Sequencing on Navy Medicine

By Lt. Vishwesh Mokashi, Biological Defense Research Directorate (BDRD), NMRC

SILVER SPRING – Genomics and bioinformatics are two intertwined and constantly changing fields affecting the way we live. The idea of having your genome sequenced, and maybe even downloaded to your smartphone, is now a very real and attainable possibility, and not the stuff of science fiction. We have reached the age when parents of children with very unique disorders have their genomes sequenced, when acts of bioterrorism are investigated using genomic evidence, and when the idea of extending sequencing capacity into the field is becoming more and more plausible. Pathogens are routinely discovered through NextGen sequencing of patient samples and the idea of using sequencers routinely for diagnostics in clinical laboratories is being widely considered.

In the BDRD Genomics Department our colleagues are engaged in some very exciting, cutting edge research ranging from sequencing bat genomes or uncovering clues leading to the design of novel antiviral drugs to analyzing pathogen genomes to create vaccines and detection assays. On any given day our team is focusing on classic biowarfare pathogens with an obvious connection to biological

defense to examining areas with the potential to impact the health and well being of our sailors and Marines and their families. Despite the many research projects going on in our laboratory one thing remains a constant - the ever-changing technologies we use to do this research.

The technology is improving at such a pace that a \$10,000 genome is quickly replaced by a \$1,000 genome and that by a \$500 genome and so on. And the software used in the sequencing instruments improves so throughput increases and data production costs decrease and the production of several gigabyte sized datasets can be done by one person in a day.

And we are excited by all these technological advancements! We can't help but be excited by how far we've come so quickly and the creative possibilities that lie ahead to do amazing things with these technologies. The instruments at our disposal are enormous data creators. They are very powerful but also limited in how the researcher designs an experiment. We still have to take pains to ensure the right controls are included and the sample collection and preparation is performed in such a way as to not bias the results. Since this is such a rapidly evolving science, there is some basic groundwork to be laid and challenges met to ensure success in deploying these sequencers in environments

such as the clinic or the field. When we are working with complex samples, such as a stool sample or a handful of soil where there are so many different microorganisms present, a given pathogen of interest may constitute less than one percent of the total sample. While it is fairly commonplace and accepted to detect or discover an organism based on one or two specific DNA fragments found out of 100,000 or more, we still need to figure out how many times to run the sample through the sequencers in order to *exclude* the presence of a specific microorganism. Investigating fundamental questions such as this one is key to our ability to be able to employ these technologies to their fullest potential to support Navy medicine.

Although we are on the cusp of great things in the application of genomics to Navy medicine and biodefense, we realize it behooves us to temper our excitement about diving into real world samples to see what we can find in them, and to approach these problems as a proper science experiment. All eyes are on genomics and the stakes are getting high, with people considering how best to use genomic data. The time has come to dig in and determine what the characteristics and limitations of these sequencing platforms and analytical methods really are, so the data

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Navy Medicine Presents Malaria Vaccine Research Achievements at Roundtable

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Malaria has had a significant impact on U.S. military operations throughout history. Malaria was responsible for a greater loss of manpower than enemy fire in all conflicts occurring in tropical regions during the 20th century. Malaria continues to present a major challenge to force health protection during operations in any environment where malaria is endemic. This includes over 100 countries spanning the tropical and subtropical regions of the world, including most of sub-Saharan Africa and larger regions of South Asia, Southeast Asia, Oceania, central Asia, the Middle East, Central and South America and the Caribbean. In a malaria-naïve military population an infection can severely degrade performance, result in missed duty, and may lead to prolonged hospitalization and, in some cases, death.

"The Navy needs a vaccine which is as effective against malaria, a serious threat to military personnel in malaria-endemic areas, as the vaccines used every day to prevent other life-threatening diseases. Our mission at NMRC is to develop a malaria vaccine to prevent malaria morbidity and mortality in military personnel and in vulnerable populations for the benefit of global public health," said Epstein. "We have reached an incredible milestone in vaccine development, but we still have more research to do, with the hopes of having an effective vaccine for the military in the next five years or so."

Malaria is not a unique military infectious disease, it is a major global health issue and according to WHO World Malaria Report there were 216 million cases of malaria and an estimated 655,000 deaths in 2010. Most deaths occur among children living in Africa. ■

Navy Medicine R&D in Geneva, Switzerland?



David Brett-Major, Head Security Preparedness Team, World Health Organization spoke at a panel discussion at the United Nations Office at Geneva. Diplomats and experts at the Biological Weapons Convention Meeting of Experts discussed ways to enhance international cooperation in response to disease outbreaks at an August 15, 2013 side event hosted by the U.S. Delegation to the conference. Photo: U.S. Mission Geneva/Eric Bridiers.

SILVER SPRING, Md. – The U.S. Navy posts an officer to Geneva, Switzerland, to support the World Health Organization (WHO). WHO is the directing and coordinating authority for health within the United Nations and is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.

For more than a decade, a senior Infectious Diseases sub-specialist or, in one case, a Preventive Medicine specialist, filled this billet supported by the Naval Medical Research Center with additional sponsorship and coordination by the Armed Forces Health Surveillance Center (AFHSC).

The AFHSC is the central epidemiological resource and a global health surveillance proponent for the U.S. Armed Forces. AFHSC was established in 2008 by merging the Army Medical Surveillance Activity, the DoD Global Emerging Infections Surveillance and Response System and the Global Health Surveillance Activity of the Force Health Protection Directorate of the Office of the Assistant Secretary of Defense for Health Affairs.

Cmdr. David Brett-Major is currently assigned to WHO and works under the Assistant Director General for Health Security and Environment (HSE). HSE focuses on the International Health Regulations; pandemic and epidemic diseases; food safety; public health and the environment and other related global health challenges. This includes responses to the Se-

vere Acute Respiratory Syndrome coronavirus (SARS-CoV), pandemic influenza A(H1N1), avian influenzas A(H5N1) and A(H7N9), the Fukushima nuclear reactor events and the Middle East respiratory syndrome coronavirus (MERS-CoV).

Brett-Major is working on a variety of initiatives related to public health preparedness and emergency risk management for health, revision of guidance on pandemic influenza, and technical guidance and operational support of recent outbreaks. Brett-Major is the only U.S. Department of Defense representative at WHO Headquarters. All other U.S. government representatives are from the Centers for Disease Control and Prevention (CDC). ■

NAMRU-3 Efforts to Build Laboratory Capacity in Burkina Faso in Support of Global Influenza Surveillance



Assessment visit to one of the influenza sentinel sites at Camp Guillaume Ouedraogo Military Base in Ouagadougou, Burkina Faso. Dr. Col. Seydou Sourabie (right) briefing on influenza surveillance activities at the Camp to Dr. Talla Nzussou (left) and Lt. Gabriel Defang (2nd from left). Picture by Camp G. Quedraogo staff.

The team assessed enrollment and sample collection procedures and made recommendations which specifically impacted the way samples are collected and preserved at the sites for transport to the testing reference laboratory.

“It is important that we get buy-in from health officials in each of these West African nations, and to impress upon them the fact that data from their surveillance networks helps formulate a better global vaccine with improved chances of a vaccine match in their respective countries,” said Defang regarding the importance of national influenza surveillance programs.

Defang and Maher accompanied by WHO and CDC representatives visited the BF Influenza Reference Laboratory in Bobo-Dioulasso to review the laboratory testing procedures and train personnel on good laboratory practice and influenza molecular diagnostics, including output data interpretation. Following the training, Prof. Zekiba Tarnagda, Head of BF Influenza Reference laboratory, instituted amendments to the influenza testing standard operating procedures to reflect the new knowledge acquired by the laboratory team.

The team next met with the National Director of Public Health, Dr. Isaie Medah, to discuss ways the country could augment data management and laboratory resources in support of the national influenza surveillance network.

In addition, NAMRU-3 researchers provided the laboratory resources and worked with Maj. Andrew Brosnan, U.S. Defense Attaché office, to support planned national pandemic response exercises. The Deputy Chief of Mission at the U.S. Embassy in BF was instrumental in facilitating a meeting with the Burkina Faso Armed Forces Health Services representative leading to an action plan to integrate military disease sentinel sites with the national influenza surveillance network. ■



CAIRO - Global influenza surveillance is critical to the development and formulation of annual influenza vaccines

administered to warfighters, the U.S. population, and the world at large. Information such as the kind of influenza affecting people in a specified region of the world is collected and reported to the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) and directly contributes to identifying the strains for the annual influenza vaccine intended to protect the vast majority of people in the northern and southern hemisphere.

In May, Lt. Gabriel Defang, program head for Viral and Zoonotic Diseases Research at the U.S. Naval Medical Research Unit – Cairo (NAMRU-3), and Emad Maher, head of the NAMRU-3 Influenza and Acute Neurological Pathogenesis Section, along with an international team with representatives from CDC and WHO, conducted a site visit to Burkina Faso (BF), a West African country.

Defang and the CDC/WHO team visited three disease sentinel sites: Centre Hospitalier Universitaire (CHU) Sanou Souro, Centre de Sante et de Promotion Sociale (CSPS) de Colsama, and Centre de Sante et de Promotion Sociale (CSPS) de Bolomakote where respiratory samples are collected from patients with influenza-like illness and severe acute respiratory infection.

NAMRU-3 Trained Entomologists from Somalia in Dengue and Malaria Vector Management



Somali collaborators in vector lab identifying Anopheles species. From left to right: Dr. Abdulhafid, Dr. Said, Dr. Alia and Dr. Jeilani at microscope. Photo by Mr. Rafi George.

CAIRO – Entomologists from Somalia who were scheduled to participate in vector management and insecticide resistance training funded by the U.S. Department of State and provided by the U.S. Naval Medical Research Medical Unit No. 3 at the WHO Eastern Mediterranean Region Office (WHO EMRO) in June, missed the opportunity. The Somali entomologists wanted to receive the training and NAMRU-3's Dr. Alia Zayed, the principal investigator for the U.S. DoS project wanted to provide the training.

Despite many road blocks, which included a journey of four days for the Somalis to reach the airport in Mogadishu and NAMRU-3's closure because of a precarious security situation, the entomologists, Dr. Jeylaini Bosuri Mio from the Ministry of Health in South Somalia, Mr. Abdihafid Yasin from the Ministry of

Health in Puntland, and Mr. Said Dahir Ali from the Ministry of Health in Somaliland arrived in Egypt August 16. Dr. Alia and Ms. Reham TagelDin conducted the first day of training for the Somalis at their hotel.

"This training targets the decision-makers and the actual entomologists in the field to be able to solve the vector control problems they have," said Dr. Alia. "Many of the problems they meet cannot be solved by their governments at higher levels."

Dr. Alia explained this training was different from the normal model for capacity building, which usually involves site visits to assess their laboratories, and see what equipment, supplies and training are needed. "This time we started by considering the human resources first."

After the first day of training at the hotel, NAMRU-3 was open again and Dr. Alia and Ms. Reham, a laboratory technologist in the NAMRU-3 Vector Biology Research Program, were able to continue the insecticide resistance training, with a special session for taxonomy and morphological identification of *Anopheles* mosquitoes in East Africa.

"We demonstrated how to deal with the malaria vector," said Ms. Reham. "NAMRU-3 and the WHO EMRO office work together to see what supplies and equipment they need and together provide the support by integrating our efforts."

On the special training sessions, Dr. Alia concluded that these efforts were definitely worth it. "I liked working with these scientists because they responded quickly, were flexible and wanted to learn." ■

NSMRL At the Top of the World

(Continued from page 4)

was in a condition that roughly resembled a submarine crew at mid to late patrol, the targeted assessment point. Due to the science mission, the NSMRL team knew they would be able to evaluate a number of different operational scenarios from high stress, multi-faceted operations to routine underway steaming to piloting in restricted waters, all in a short period of time. Another aspect to be tested was STBT applicability to platforms other than a submarine. Vice Adm. Connor, Commander of U.S. Submarine Forces, saw great benefit in this tool not only for the Submarine Fleet, but for the Navy as a whole if it could be proven universal in application. Correspondingly, by engaging the HEALY Commanding Officer, Capt. John Reeves, and Executive Officer, Cmdr. Greg Stanclik, the NSMRL team was able to place the STBT in the hands of the cutter's leadership to solicit further input from a fresh, non-submariner, perspective.

Fortunately, all objectives were met with resounding success. The team brought back numerous observations and recommendations to fine-tune the STBT before its release to the Submarine Fleet for operational use.

The Coast Guard Cutter HEALY is the United States' newest and most technologically advanced polar icebreaker. HEALY is designed to conduct a wide range of research activities, providing more than 4200 square feet of scientific laboratory space, numerous electronic sensor systems, oceanographic winches, and accommodations for up to 50 scientists. HEALY is designed to break 4 ½ feet of ice continuously at 3 knots and can operate in temperatures as low as 50 below zero.



Lt. Couturier dons a protective Coast Guard immersion suit, also known as a "gumby" suit.

As a Coast Guard Cutter, HEALY is also a capable platform for supporting other potential missions in the polar regions, including logistics, search and rescue, ship escort, environmental protection, and en-

forcement of laws and treaties. More information about the HEALY and Arctic Shield 2013 may be found at <http://www.icefloe.net>. ■

Focusing the Power of NextGen Sequencing on Navy Medicine

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will be interpreted correctly.

For our group this is quite an active and satisfying area of research. For the past several years we have been creating artificial samples to mimic human clinical samples or environmental samples, and using

these artificial samples to test different sequencing platforms for their sensitivity, specificity, reproducibility, etc. The benefit of systematically sampling from artificial samples is that we know how many microorganisms these samples contain which allows us to compare our sequencing results from the multiple different platforms

or sample preparation methods and draw conclusions about detection and discrimination. Through these efforts, we believe we will gain a better understanding of what is possible and realistic in the clinic, in the field, and elsewhere, and how best to employ these technologies for the benefit of Navy medicine and public health. ■

WRMMC Holds Chief Pinning Ceremony September 13

BETHESDA, Md.—Walter Reed Military Medical Center held the National Capital Region Chief pinning ceremony for six Sailors, September 13. Of the six Sailors, two were from the Naval Research Medical Center (NMRC). Family, friends, and shipmates joined the newly appointed chiefs as they were ceremoniously pinned and welcomed into the Chief's Mess.

The day it was announced that their names were on the list, newly pinned Chief Hospital Corpsman Vilma Bauer described the feeling she felt as relief and a great sense of pride. Chief Hospital Corpsman Mario Espino was celebrating his wife's birthday that day when he found out the surprising news.

The ceremony, which dates back to 1893, signifies a new position of leadership and responsibility for the Navy. The ceremony follows a six week training period known as induction. The chief selects are introduced to challenges intended to strengthen their leadership and mentorship abilities.

Family members and mentors pinned the two gold anchors onto the collars of soon-to-be chiefs' new khaki uniforms. The new chiefs gave credit to their family, friends, mentors and shipmates that supported them through the process.

"This is a significant milestone in a Sailor's career and life. They were challenged and tested, leading to their pinning and welcoming into the Chief's Mess. Bauer

and Espino are a welcome addition to the command and to Navy Medicine R&D. Their leadership and guidance will have a lasting impact on the Sailors, Soldiers, and civilians within the command. My advice for both is to never forget their heritage and be the kind of leader that your Sailors deserve," Chief Hospital Corpsman Jerrold Diederich of NMRC.

Espino and Bauer, both assigned to the NMRC Biological Defense Research Directorate, came out of the training with valuable lessons learned and a great sense of pride toward a fraternity that is full of tradition and history. "I learned to carry on the legacy of being 'the chief', uphold the standards, to take care of and mentor Sailors and junior officers and lead them to be the next leaders," said Espino.

Guest speaker, retired Master Chief Hospital Corpsman Brian Pampuro, spoke proudly about the strong fraternity and the lifelong commitment of being a chief petty officer. During his speech, Pampuro advice for being a good leader is to take care of

your people and always lead from the front. "Don't hesitate to reach out to your fellow chiefs for support and assistance. Set an example; leave a legacy and a future that our Navy can bank on. You are now being held to a higher standard," said Pampuro.

Now that they have become chiefs, Espino and Bauer's goal is to continue to move forward and be successful. "My favorite charge I received is don't rest on your laurels, shoot for the star. So here I go, onto the next great adventure!" said Bauer. ■



Left to right: Chief Jerrold Diederich, Chief Vilma Bauer, and Chief Mario Espino.



The Navy Turns 238!

October 13, 2013 will mark the U.S. Navy's 238th birthday. Beginning with the establishment of our Navy in 1775 and continuing to our current Fleet, the Navy has stood the watch for more than two centuries. The U.S. Navy traces its roots back to the privateers that were employed to attack British commerce in the early days of the revolution. On October 13, 1775 the Continental Congress, established a small naval force, hoping that a small navy would be able to offset the untested exercise of British sea power.

Left picture: NMRC Executive Officer Capt. Elizabeth Montcalm-Smith and Petty Officer 2nd Class Andre Gore.

Right picture: NMRC BDRD gets ready to cut the cake.



Greetings from the NMRC Ombudsman!

Before I get into this month's topic of Women's Health, I'd like to take a moment to say a few words about recent events. As I sit down to write this, the government has just entered into a partial shutdown, and this comes on the heels of the mass shooting at the Navy Yard and the furloughs that came to pass over the summer. These events have only added to the stress levels that we already have on a daily basis. Given these additional stresses, I'd like to remind you of the resources available to each of us in these trying times. Regardless of whether you need financial assistance or help coping with stress, resources are available. For those of us in the Washington, DC area, one resource is the Fleet and Family Services at the Medical Center in Bethesda. Their phone number is (301) 319-4088 or 4086. Alternatively, you can also reach out to the Navy & Marine Corps Relief Society, also located at the Medical Center in Bethesda. The number for the Navy & Marine Corps Relief Society is (301) 295-1207. If neither of these resources meets your needs, please contact me directly.

As I mentioned above, this month is Women's Health Month. While women and men have many of the same health issues, these problems can affect women differently. For example; women are more likely to die following a heart attack than men, women are more likely to show signs of depression and anxiety than men, women are more likely to have urinary tract problems, and osteoarthritis affects more women than men. Key to maintaining good health, for both men and women, are regular medical screenings. Below are some recommended medical screenings specifically for women:

Breast cancer screening. A mammogram (X-ray of the breast) is recommended for all women beginning at age 50, or earlier if a woman has a family history of breast cancer. Screening is recommended every 2 years.

Cervical cancer screening. Screening for cervical cancer should include a Pap test, a screening performed during a pelvic exam that checks for changes in the cells of the cervix, and an HPV (human papillomavirus) test, which finds certain infections that can lead to cell changes and cancer. The recommendations for cervical cancer screening include:

- Beginning at age 21, a Pap test is recommended every 3 years until age 29. An HPV test is not necessary if a woman has normal Pap test results.
- For women between the ages of 30 and 65, Pap tests should also be done every 3 years but should be combined with an HPV test every 3 to 5 years.
- Screening is not recommended for women ages 65 or older who have had three or more normal Pap tests in a row and no abnormal Pap test results in the past 10 years.

*The screening recommendations **do not** apply to women who have had a hysterectomy (surgical procedure to remove their cervix and uterus). The recommendations **do** apply to women who have had the HPV vaccine.

Osteoporosis screening. A bone mineral density test should begin at age 65 or earlier if a woman is at risk for osteoporosis. Risk factors include older age (post-menopause), a family history, low body weight or a small, thin frame, a history of broken bones, a lack of calcium and vitamin D, smoking, an inactive lifestyle, an unhealthy diet, and drinking too much alcohol.

The screenings listed above are just a few of the many tests that women should seek throughout their lives. Some screenings, such as blood pressure and cholesterol checks and colonoscopies (to screen for colon cancer) are important for both men and women. Of course, medical screenings are only part of maintaining good health. Healthy lifestyle choices such as eating a healthy diet and including physical activity in your daily routine can go a long way toward reducing women's health risks.

Finally, October is also Domestic Violence Awareness Month. If you or someone you know is in an abusive relationship, the National Domestic Violence Hotline is **800-799-SAFE (7233) or TTY 800-787-3224**.

As always, if you are in search of other resources or assistance, please don't hesitate to contact me. I can be reached by phone at (301) 233-9789 or by email at NMRC.Ombudsman@gmail.com. ■

Enjoy the rest of your summer!
Alexandra Mora, NMRC Ombudsman